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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,558	09/20/2006	Kouji Masuda	050203-0145	5078

31824 7590 03/04/2010

MCDERMOTT WILL & EMERY LLP
18191 VON KARMAN AVE.
SUITE 500
IRVINE, CA 92612-7108

EXAMINER	
TRAN, BINH Q	
ART UNIT	PAPER NUMBER
3748	

MAIL DATE	DELIVERY MODE
03/04/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/572,558	MASUDA ET AL.	
	Examiner	Art Unit	
	BINH Q. TRAN	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *15-18* is/are allowed.

6)☒ Claim(s) *1,2,6-10,13 and 14* is/are rejected.

7)☒ Claim(s) *3-5, 11-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/06; 09/06; 03/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *IDS's 04/08; 05/08; 06/08*.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 6-10, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tost (Patent Number 6,637,196) in view of Funk et al. (Funk) (Patent Number 7,065,958).

Regarding claims 1, 7, Tost discloses an exhaust emission purifying apparatus (4) for an engine (1), comprising: a reduction catalyst (5) disposed in an engine exhaust system, for reductively purifying nitrogen oxides with a reducing agent; a storage tank (9) storing therein the reducing agent; a reducing agent supply device (11) that supplies the reducing agent from said storage tank to said reduction catalyst (5); a first discharge-forcing device that forcibly discharges a gas in an upper space of said storage tank to an intake system or said exhaust system on an upstream side of said reducing agent oxidation catalyst (e.g. See col. 5, lines 60-67; col. 6, lines 1-16); and a first operation control device that operates said first discharge-forcing device when the temperature detected by said temperature detecting device reaches an activating temperature for said reducing agent oxidation catalyst or above (e.g. See col. 6, lines 17-60). However, Tost fails to disclose a reducing agent oxidation catalyst disposed on an exhaust downstream side of said reduction catalyst, for oxidizing the reducing agent passed through said

reduction catalyst; and a temperature detecting device that detects a temperature of said reducing agent oxidation catalyst.

Funk teaches an exhaust emission purifying apparatus (Figure 3) for an engine, comprising: a reduction catalyst (19) disposed in an engine exhaust system, for reductively purifying nitrogen oxides with a reducing agent; a reducing agent oxidation catalyst (20) disposed on an exhaust downstream side of said reduction catalyst (19), for oxidizing the reducing agent passed through said reduction catalyst (e.g. See col. 5, lines 24-51); a storage tank (15) storing therein the reducing agent; a reducing agent supply device (15) that supplies the reducing agent from said storage tank to said reduction catalyst (19); a temperature detecting device (7, 8) that detects a temperature of said reducing agent oxidation catalyst; and a first operation control device that operates said first discharge-forcing device when the temperature detected by said temperature detecting device reaches an activating temperature for said reducing agent oxidation catalyst or above (e.g. See col. 5, lines 24-67; col. 6, lines 1-67).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to use a reducing agent oxidation catalyst disposed on an exhaust downstream side of said reduction catalyst, for oxidizing the reducing agent passed through said reduction catalyst; and a temperature detecting device that detects a temperature of said reducing agent oxidation catalyst of Tost, as taught by Funk for the purpose of oxidizing the reducing agent slip through said reduction catalyst, and controlling the temperature of the oxidation catalyst more accurately, so as to reduce the poisoned materials in the purifying catalyst and to reduce amount of nitrogen oxides in the exhaust gas of the lean-burn engine, and further improve the performance of the engine and the efficiency of the emission device.

Regarding claims 2, 9, Tost further discloses wherein said first operation control device operates said first discharge-forcing device for a predetermined period of time (e.g. See col. 5, lines 60-67; col. 6, lines 1-16).

Regarding claim 6, Funk further discloses wherein said temperature detecting device detects the temperature of said reducing agent oxidation catalyst indirectly via the exhaust emission temperature on the upstream side of said reducing agent oxidation catalyst (e.g. See col. 5, lines 24-67; col. 6, lines 1-67).

Regarding claim 8, Funk further discloses a reducing agent temperature detecting device detecting the temperature of the reducing agent in said storage tank; and a second operation control apparatus that operates said second discharge-forcing device when the temperature of the reducing agent detected by said reducing agent temperature detecting device is equal to or higher than the first predetermined temperature (e.g. See col. 5, lines 24-67; col. 6, lines 1-67).

Regarding claim 10, Funk further discloses a catalyst temperature detecting device that detects the temperature of said oxidation catalyst; and a catalyst activating device that activates said oxidation catalyst based on the catalyst temperature detected by said catalyst temperature detecting device (e.g. See col. 5, lines 24-67; col. 6, lines 1-67).

Regarding claim 13, Funk further discloses wherein said adsorbing device is mordenite, cobalt-supported mordenite or activated carbon (e.g. See col. 5, lines 24-67; col. 6, lines 1-67).

Regarding claim 14, Funk further discloses wherein said oxidation catalyst is an electrically heated honeycomb catalyst (Obvious) (e.g. See col. 5, lines 24-67; col. 6, lines 1-67).

Allowable Subject Matter

Claims 15-18 are allowed.

Claims 3-5, 11-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: The prior art fails to disclose or render obvious the claimed combination including a heating device that circulates a heating medium heated by said engine, within said storage tank, to heat said reducing agent stored in said storage tank; a blocking device that blocks a passage which leads said heating medium into said storage tank; a heating medium temperature detecting device that detects the temperature of said heating medium; and first control means for controlling said blocking device to block said passage, when the heating medium temperature detected by said heating medium temperature detecting device is higher than the third predetermined temperature.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of five patents: Tumati et al. (Pat. No. 6871489), Jacob et al. (Pat. No. 6928807), Mathes et al. (Pat. No. 6878359), Itoh et al. (Pat. No. 6725651), Marko et al. (Pat. No. 387336) all discloses an exhaust gas purification for use with an internal combustion engine.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Binh Tran whose telephone number is (571) 272-4865. The examiner can normally be reached on Monday-Friday from 8:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (571) 272-4859. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BINH Q. TRAN/
Binh Q. Tran
Primary Examiner, Art Unit 3748
March 01, 2010